

We claim:

1. A golf ball comprising a core and a cover, wherein the cover is molded from thermoplastic material comprising a polyurethane, polyurea or polyurethane/polyurea composition having a melt index of 15 g/10 min or more at a temperature of 200°C to 210°C and a load of 8.7 kg prior to molding, and wherein the cover is treated with a secondary curing agent comprising an isocyanate subsequent to molding.
2. The golf ball of claim 1, wherein the cover has a cross-sectional thickness of 0.075 or less.
3. The golf ball of claim 1, wherein the cover has a cross-sectional thickness of 0.050 or less.
4. The golf ball of claim 1, wherein the cover has a cross-sectional thickness of 0.040 or less.
5. The golf ball of claim 1, wherein the cover has a cross-sectional thickness of 0.030 or less.
6. The golf ball of claim 1, wherein the melt index of the material is 20 g/10 min or more at a temperature of 200°C to 210°C and a load of 8.7 kg prior to molding.
7. The golf ball of claim 1, wherein the melt index of the material is 25 g/10 min or more at a temperature of 200°C to 210°C and a load of 8.7 kg prior to molding.
8. The golf ball of claim 1, wherein the melt index of the material is 30 g/10 min or more at a temperature of 200°C to 210°C and a load of 8.7 kg prior to molding.

9. The golf ball of claim 1, further comprising one or more intermediate layers disposed between said core and said cover.

10. The golf ball of claim 1, wherein the isocyanate is MDI.

11. A golf ball comprising a core and a cover, wherein the cover has a Shore D hardness of 60 or less and is molded from a thermoplastic material comprising a polyurethane, polyurea or polyurethane/polyurea composition having a flex modulus of 30,000 psi or less and a melt index of 15 g/10 min or more at a temperature of 200°C to 210°C and a load of 8.7 kg prior to molding, and wherein the cover is treated with a secondary curing agent comprising an isocyanate subsequent to molding.

12. The golf ball of claim 11, wherein the cover has a Shore D hardness of 55 or less.

13. The golf ball of claim 11, wherein the cover has a Shore D hardness of 50 or less.

14. The golf ball of claim 11, wherein the cover has a Shore D hardness of 45 or less.

15. The golf ball of claim 11, wherein the cover additionally comprises an ionomer or non-ionomer material.

16. The golf ball of claim 11, wherein the melt index of the material is 20 g/10 min or more at a temperature of 200°C to 210°C and a load of 8.7 kg prior to molding.

17. The golf ball of claim 11, wherein the melt index of the material is 25 g/10 min or more at a temperature of 200°C to 210°C and a load of 8.7 kg prior to molding.

18. The golf ball of claim 11, wherein the melt index of the material is 30 g/10 min or more at a temperature of 200°C to 210°C and a load of 8.7 kg prior to molding.

19. The golf ball of claim 11, wherein the flex modulus of the material is 20,000 psi or less.

20. The golf ball of claim 11, wherein the flex modulus of the material is 15,000 psi or less.

21. The golf ball of claim 11, wherein the flex modulus of the material is 10,000 psi or less.

22. The golf ball of claim 11, further comprising one or more intermediate layers disposed between said core and said cover.

23. A game ball component comprising a molded thermoplastic polyurethane, polyurea or polyurethane/polyurea material having a flex modulus of 30,000 psi or less, wherein the melt index of the material is increased at least 10% prior to molding, and wherein the molded thermoplastic material is subsequently treated with a secondary curing agent comprising an isocyanate.

24. The game ball component of claim 23, wherein the melt index of the thermoplastic material is increased by mechanical or chemical means.

25. The game ball component of claim 23, wherein the melt index of the thermoplastic material is increased by reducing the weight average molecular weight of the material.

26. The game ball component of claim 23, wherein the thermoplastic material has an increased melt index of from 20% to 720%.

27. The game ball component of claim 23, wherein the melt index of the thermoplastic material is increased from 50% to 620%.

28. The game ball component of claim 23, wherein the melt index of the thermoplastic material is increased 100% or more.

29. The game ball component of claim 23, wherein the molded component has a thickness of 0.075 inches or less.

30. The game ball component of claim 23, wherein the molded component has a thickness of 0.050 inches or less.

31. The game ball component of claim 23, wherein the molded component has a thickness of 0.030 inches or less.

32. The game ball component of claim 23, wherein the flex modulus of the material is 20,000 psi or less.

33. The game ball component of claim 23, wherein the flex modulus of the material is 15,000 psi or less.

34. The game ball component of claim 23, wherein the flex modulus of the material is 10,000 psi or less.

35. The game ball component of claim 23, wherein the component has a Shore D hardness of 60 or less.

36. The game ball component of claim 23, wherein the component has a Shore D hardness of 55 or less.

37. The game ball component of claim 23, wherein the component has a Shore D hardness of 50 or less.

38. The game ball component of claim 23, wherein the component has a Shore D hardness of 45 or less.

39. A golf ball comprising:

a core;

a cover molded on said core, said cover includes a thermoplastic material having an increased melt index of 20% or more, wherein said thermoplastic material comprises polyurethane, polyurea, polyurethane ionomer, thermoplastic silicones or blends thereof having a flex modulus of 30,000 psi or less, and wherein the cover is treated by the application of an isocyanate subsequent to molding.

40. The golf ball of claim 39, wherein said cover includes an inner cover layer disposed on said core and an outer cover layer disposed on said inner cover layer, and said outer cover layer including said thermoplastic material.

41. The golf ball of claim 39, wherein said outer cover layer has a thickness of from about 0.010 inches to about 0.075 inches.

42. The golf ball of claim 39, further comprising:

a mantle layer disposed between said core and said cover.

43. The golf ball of claim 39, wherein said isocyanate is selected from the group consisting of 4,4'-diphenylmethane diisocyanate ("MDI"); 2,4-toluene diisocyanate ("TDI"); m-xylylene diisocyanate ("XDI"); methylene bis-(4-cyclohexyl isocyanate) ("HMDI"); hexamethylene diisocyanate ("HDI"); naphthalene-1,5,- diisocyanate ("NDI"); 3,3'-dimethyl-4,4'-biphenyl diisocyanate ("TODI"); 1,4- diisocyanate benzene ("PPDI"); phenylene-1,4-diisocyanate; 2,2,4- or 2,4,4-trimethyl hexamethylene diisocyanate ("TMDI"); isophorone diisocyanate ("IPDI"); 1,4- cyclohexyl diisocyanate ("CHDI"); diphenylether-4,4'-diisocyanate; p,p'-diphenyl diisocyanate; lysine diisocyanate ("LDI"); 1,3-bis (isocyanato methyl) cyclohexane; polymethylene polyphenyl isocyanate ("PMDI"); meta-tetramethylxylylene diisocyanate ("TMXDI"); and combinations thereof.

44. The golf ball of claim 43, wherein said isocyanate is MDI.

45. A golf ball comprising:

a core;

a cover molded on said core, said cover formed from a polymeric cover composition that includes a polyurethane, said cover composition having a melt index prior to molding said cover of from about 15 to about 85 grams per 10 minutes at a temperature of 200°C to 210°C and a load of 8.7 kg, and wherein the cover is treated by the application of an isocyanate subsequent to molding.

46. The golf ball of claim 45, wherein said polyurethane in said cover composition has a melt index of from about 25 to about 50 grams per 10 minutes at a temperature of 200°C to 210°C and a load of 8.7 kg.

47. The golf ball of claim 45, wherein said cover includes an inner cover layer disposed on said core and an outer cover layer disposed on said inner cover layer, and said outer cover layer formed from said polyurethane.

48. The golf ball of claim 45, wherein said outer cover layer has a thickness of from about 0.010 inches to about 0.050 inches.

49. The golf ball of claim 45, further comprising:

a mantle layer disposed between said core and said cover.

50. The golf ball of claim 45, wherein said isocyanate is selected from the group consisting of 4,4'-diphenylmethane diisocyanate ("MDI"); 2,4-toluene diisocyanate ("TDI"); m-xylene diisocyanate ("XDI"); methylene bis-(4-cyclohexyl isocyanate) ("HMDI"); hexamethylene diisocyanate ("HDI"); naphthalene-1,5,- diisocyanate ("NDI"); 3,3'-dimethyl-4,4'-biphenyl diisocyanate ("TODI"); 1,4- diisocyanate benzene ("PPDI"); phenylene-1,4-diisocyanate; 2,2,4- or 2,4,4-trimethyl hexamethylene diisocyanate ("TMDI"); isophorone diisocyanate ("IPDI"); 1,4- cyclohexyl diisocyanate ("CHDI"); diphenylether-4,4'-diisocyanate; p,p'-diphenyl diisocyanate; lysine diisocyanate ("LDI"); 1,3-bis (isocyanato methyl) cyclohexane; polymethylene polyphenyl isocyanate ("PMDI"); meta-tetramethylxylylene diisocyanate ("TMXDI"); and combinations thereof.

51. The golf ball of claim 45, wherein said isocyanate is MDI.